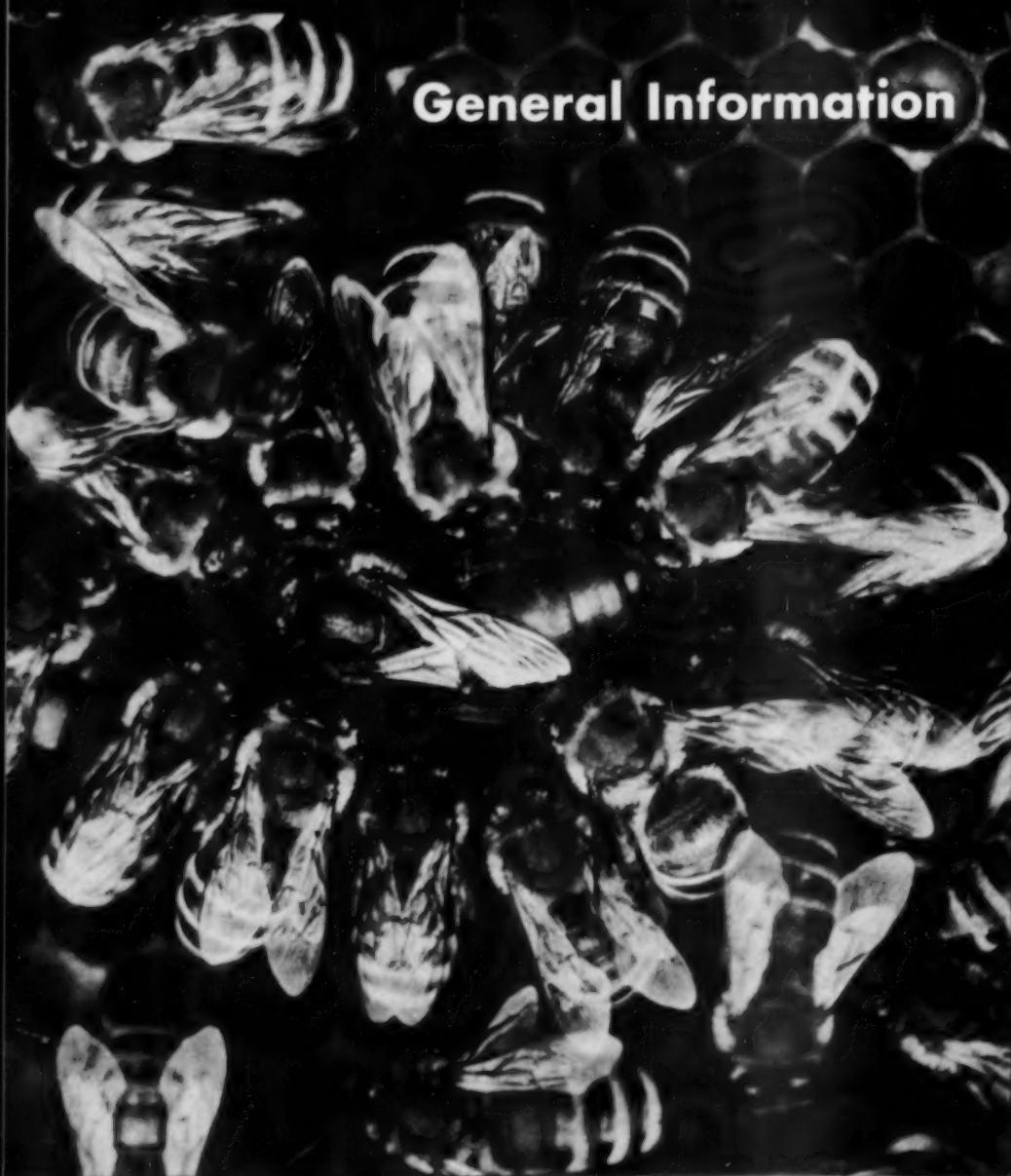


# Beekeeping

E. J. DYCE

**General Information**



## Contents

	PAGE
The extent of the beekeeping industry .....	3
The honeybee in pollination .....	3
Who keeps bees .....	4
A skilled occupation .....	4
How to acquire a knowledge of beekeeping .....	4
Beekeeping literature .....	5
Current books .....	5
Bulletins and circulars .....	5
Service letters .....	5
Beekeeping journals .....	5
Reports and statistics .....	6
The beekeeping library at Cornell University .....	6
Cornell Farm study courses in beekeeping .....	6
Visual material .....	7
Beekeeping organizations .....	7
New York State .....	7
United States .....	7
When to start beekeeping .....	8
Buying bees .....	8
Where to buy bees and queens .....	8
Kinds of bees to purchase .....	8
Equipment .....	8
Types of equipment to use .....	8
Where equipment may be purchased .....	9
Homemade equipment .....	9
Where and how far apart to place apiaries .....	9
Bee stings .....	10
Causes for success or failure in beekeeping .....	10
Diseases of bees .....	10
Apiary pests .....	11
Importance of good queens .....	12
Room for brood-rearing and storage of honey .....	12
Summary of seasonal management .....	12

# Beekeeping

## General Information

E. J. DYCE

**T**HIS bulletin provides general information about beekeeping that is not usually included in current publications. Information on specific beekeeping problems may be obtained by writing to the Office of Apiculture, Department of Entomology, New York State College of Agriculture, Ithaca, New York.

### **The Extent of the Beekeeping Industry**

About 600,000 persons keep some 5,250,000 colonies of bees in the United States. The annual production usually exceeds 200,000,000 pounds of honey and 4,000,000 pounds of beeswax. In New York State, approximately 12,000 persons keep at least 175,000 colonies of honeybees. The annual production averages 10,000,000 pounds of honey and 175,000 pounds of beeswax, which is higher than the average per colony for the entire country but not so high as that of some of the Northwestern States. New York State ranks first among Eastern States in honey production and usually ranks among the first six States in this country in number of colonies and in production. A colony of bees with complete equipment costs from \$25 to \$30, which means that about \$5,000,000 has been invested in bees and equipment, exclusive of honey houses and honey packing plants, in this State.

### **The Honeybee in Pollination**

The pollination of agricultural crops is the greatest contribution of honeybees to our national economy. While it is impossible to estimate the value of honeybees for pollination, it is many times the total value of the crops of both honey and beeswax. Without the service of insects many crops would not set seed or produce fruit. Many insects other than honeybees perform this service, but their numbers have in some areas become so reduced that honeybees are now by far the most numerous and important pollinating insects.

Several conditions have contributed to the decline in native pollinating insects. Over the years there has been a progressive trend toward intensive and specialized agriculture. Areas formerly devoted to general farming are now planted to fruit trees and to other specialized crops. Much of the land in these areas is undergoing constant cultivation and no longer produces enough nectar

and pollen-bearing plants to maintain pollinating insects. In many situations there is little waste land between the plantings for the nesting and hibernation of native beneficial insects. The increasing use of insecticides, especially in the form of dusts, has not only forced beekeepers to move bees from fruit areas but has reduced the number of native pollinating insects in some areas almost to the vanishing point.

Agriculture is, therefore, becoming more and more dependent on honeybees. This need is recognized by fruit growers more than by others, as indicated by the fact that several thousand colonies are rented annually by orchardists for the blossoming period. Shortage of seed must, in a considerable measure, be attributed to agricultural practices destructive to native beneficial insects and to the failure to recognize the availability of honeybees as a partial substitute.

### **Who Keeps Bees**

Bees are kept by persons in all walks of life. To many they are simply a hobby—a form of relaxation, or an interesting subject for nature lovers. Many women keep a few colonies, but seldom more because of the necessary lifting involved. More extensive beekeepers derive a part or all of their living from bees, and may operate as many as several thousand colonies.

### **A Skilled Occupation**

Beginners in beekeeping are often motivated by a desire to make a living from honey production. So many things are involved that it is impossible to state the number of colonies needed to accomplish this. If bees are given proper attention, 500 colonies are considered the maximum that a skilled beekeeper can manage without extra help. The complete equipment necessary to operate such an outfit efficiently may require an investment of from \$15,000 to \$20,000. No beginner should consider such an outlay until he has had several years of experience with bees and is convinced that he has the necessary ability to produce and sell enough honey to make the venture a financial success. A good plan is to increase the number of colonies each year while continuing a full- or part-time job.

### **How to Acquire a Knowledge of Beekeeping**

To be successful with even a few colonies, a thorough knowledge of the life and the behavior of bees should be acquired. A good way to obtain this knowledge and at the same time to learn whether beekeeping is a congenial occupation, is to work with a skilled beekeeper. While obtaining practical experience, spare time should be devoted to reading the best books and bulletins on the subject. Few persons make a success of beekeeping without practical experience.

## Beekeeping Literature

### Current books

There are hundreds of books on beekeeping. The following partial list covers most phases of beekeeping and most are widely used. These and other books may be obtained from publishers, book stores, and bee-supply dealers.

*ABC and XYZ of Bee Culture.* By E. R. Root. A. I. Root Company, Medina, Ohio.

*American Honey Plants.* By Frank C. Pellett. Orange Judd Publishing Company, Inc., New York, New York.

*Starting Right with Bees.* By H. G. Rowe, A. I. Root Company, Medina, Ohio.

*The Hive and the Honeybee.* By Roy A. Grout. Dadant and Sons, Hamilton, Illinois.

*Queen Rearing.* By Harry H. Laidlaw Jr. and J. E. Eckert. Dadant and Sons, Hamilton, Illinois.

### Bulletins and circulars

Bulletins and circulars are available on specific phases of beekeeping. Inquiries about these may be sent to the Office of Apiculture, New York State College of Agriculture, Ithaca, New York, and to the Division of Bee Culture, Agricultural Research Administration, Beltsville, Maryland. Because of the limitations in the number of publications now available, and because of the transient nature of much of the material in the beekeeping journals, the beekeeper is urged to obtain as much of his information as possible from standard books on beekeeping. More detailed information on specific questions may be obtained by writing to the Office of Apiculture, New York State College of Agriculture.

### Service letters

Service letters, containing timely up-to-date information on various phases of beekeeping, may be obtained without cost from the County Agricultural Agent.

### Beekeeping journals

The following journals with national distribution are published monthly. Write to the publishers for sample copies and prices.

American Bee Journal .....	Hamilton, Illinois
Gleanings in Bee Culture .....	Medina, Ohio
Modern Beekeeping .....	Clarkson, Kentucky

Of the bee journals published in other countries, the *Bee World*, 55 Newland Park, Hull, York, England, is perhaps the most significant. It attempts to publish English abstracts of all the important scientific papers on beekeeping throughout the world.

## **Reports and statistics**

### **Semi-Monthly Honey Report**

*The Semi Monthly Honey Report* is issued on the first and the fifteenth of each month. This report deals with conditions of colonies and honey plants, prices of honey and beeswax in various markets, and other information of interest to beekeepers. It may be obtained without cost by writing to the Agricultural Marketing Service, Washington 25, D. C.

### **Annual Statistics for the United States Department of Agriculture**

Figures on the number of colonies and the annual production of honey and beeswax for each State may be obtained without cost from the Agricultural Marketing Service, Washington 25, D. C.

### **Statistics for New York State**

Information on the number of colonies and on the production of honey and beeswax in New York State may be obtained without cost by writing to the Department of Agriculture and Markets, Albany 1, New York.

## **The beekeeping library at Cornell University**

The Everett Franklin Phillips Beekeeping Library consists of thousands of books, bulletins, pamphlets, and volumes of beekeeping journals. It is probably the most valuable collection of beekeeping literature in the world. Some notable collections have been included, such as the entire beekeeping library of Moses Quinby, all books known to remain from the libraries of L. L. Langstroth, Dr. C. C. Miller, and Dr. John Anderson, the Evard French Library, and a large collection of first editions. Among the most valuable items are Langstroth's hand-written journal, his letter press book, and a diary of Moses Quinby.

All items in the library except the special treasures are available to serious users through Interlibrary Loan Service. Applications should be made to any public library.

Some of the most valuable parts of this library have been obtained by exchange with foreign institutions and libraries, and there is constant need for extra copies of older books and all volumes of beekeeping journals. Such items are welcome and should be addressed to the Office of Apiculture, New York State College of Agriculture, Ithaca, New York.

## **Cornell Farm Study Course in Beekeeping**

The farm-study course is designed to help New York State beekeepers make their apiaries more profitable. Ownership of an apiary or at least one colony of bees is necessary, since the course requires actual handling of bees and of their products and equipment as well as the study of books and bulletins related to beekeeping. Written reports on 13 lessons and on 8 out of 10 practical exer-

cises, plus a final examination, are required. All papers are graded and returned to the students. The only cost of the course is for textbooks.

Applications and information concerning the course should be addressed to Cornell Farm Study Courses, Roberts Hall, Ithaca, New York.

### Visual Material

Motion pictures on the life, habits, and behavior of honeybees may be obtained from the Film Library, New York State College of Agriculture, Ithaca, New York. A catalogue listing the films available and the procedure for obtaining them will be forwarded by the Film Library on request.

### Beekeeping Organizations

#### New York State

The **Empire State Honey Producers Association** represents the beekeeping industry in New York State. The annual meeting of this organization is usually held in Syracuse during the early part of December. The combined summer meeting and picnic is usually held on the second Saturday in August. The date and location of meetings are announced in the bee journals. Meetings are open to all beekeepers.

**Regional beekeepers' associations** hold meetings in the western, northern, eastern, and southern sections of the State. There are also several county organizations which have meetings each month or from time to time. For information concerning these meetings, one should consult the County Agricultural Agent or the Office of Apiculture, New York State College of Agriculture.

#### United States

The **American Beekeeping Federation** represents the entire beekeeping industry of this country. The place of the annual meeting is changed from year to year to provide beekeepers in different sections of the country a better opportunity to attend. Announcements concerning this organization are made in the bee journals.

The **American Honey Institute** is an organization sponsored by the beekeeping associations, bee supply houses, honey packing plants, and individual beekeepers. Its purpose is to study new and better uses for honey in the home, to prepare reliable literature, and to give publicity to honey. Recipe booklets and pamphlets on the use of honey in the home may be obtained from the home office of this organization at the Commercial State Bank Building, Madison, Wisconsin.



## When to Start Beekeeping

The best time to start beekeeping is in the spring about the time the dandelions and fruit trees commence to bloom. Many beginners start with packages which consist of 2 or 3 pounds of bees and a mated queen shipped in a temporary wire cage without combs from the Southern States. It is advisable to install package bees on full sheets of comb foundation instead of drawn combs, and to feed them sugar syrup instead of honey. These precautions are taken to guard against the possibility of spreading American foulbrood. The same precautions should be taken in hiving stray swarms of bees. Established colonies purchased from a neighboring beekeeper should be well supplied with honey and should be in standard hives in good condition and accompanied by a certificate of inspection.

## Buying Bees

### Where to buy bees and queens

Package bees and queens may be purchased from southern producers, most of whom advertise in the beekeeping journals. Established colonies and equipment for sale are also advertised in the beekeeping journals.

### Kind of bees to purchase

Italian bees are recommended for beginners as they are most commonly used by beekeepers in this country and are raised by practically all of the queen and package-bee producers. A few breeders raise Caucasian and Carniolan bees, but 90 percent of the beekeepers consider Italian bees the best.

## Equipment

### Type of equipment to use

In 1851, L. L. Langstroth discovered the "bee-space" and invented a beehive which has become standard in the United States and in many other countries. The "bee-space" ( $\frac{1}{4}$  to  $\frac{3}{8}$  of an inch) is an area large enough to permit the free passage of bees but too wide to induce bees to deposit propolis, and too narrow for comb building. The Langstroth or standard hive opens at the top and the frames ( $9\frac{1}{2}$  inches high by  $17\frac{1}{2}$  inches long) that contain the individual combs are hung in each hive-body to provide a bee-space all around each frame. The portion of the hive used for rearing brood (brood chamber) consists of one or two hive units, and the space for storage of honey consists of additional units (supers) placed above.

Some beginners produce section comb-honey, but a high-quality product requires considerable skill in colony management. For home use, comb-honey may be produced in shallow frames of standard length on thin comb foundation made especially for this purpose (embossed sheets of pure beeswax which



form the midribs of the combs). Most beekeepers produce extracted honey for which full-depth supers are generally used. This requires the use of a centrifugal honey extractor for the removal of the honey; for a beginner this need not be an expensive model.

Items required by the beginner are especially listed in the catalogs of supply manufacturers, and additional equipment needed for any one type of honey production may be ordered separately. The 10-frame hive is the type most widely used in this State. Since this equipment is available at all bee supply houses and has the greatest resale value, the beginner should hesitate to purchase hives of any other type.

### Where equipment may be purchased

Hives and other beekeeping equipment are manufactured by several companies in various parts of the United States. Beekeepers may obtain the names and addresses of these firms from any of the beekeeping journals and write for catalogs. Names of suppliers of equipment in New York State may be obtained from the office of Apiculture, Department of Entomology, New York State College of Agriculture, Ithaca, New York, or from the County Agricultural agent.

### Homemade equipment

Many commercial beekeepers believe that it pays to buy accurate factory-made equipment. The frames fit better in the hives, requiring less effort to remove and replace them. On the other hand, beginners often wish to make their own equipment. If hives are to be made at home, the best plan is to buy a complete hive for a model. Exact dimensions must be adhered to, otherwise the bees will build comb and deposit propolis where it is not desired.

### Where and How Far Apart to Place Apiaries

Colonies should be placed in a *well-drained* sunny area sheltered from prevailing winds by bushes or low-growing evergreen trees. The bees should be far enough from the road to prevent them from becoming a nuisance to passers-by. A 6-foot hedge surrounding an apiary causes the bees to fly upwards, and reduces the danger of them annoying people. When possible, the entrances should face south or southeast.

It is an unwritten law among beekeepers that no sizeable apiary should be installed within two miles of another such apiary. If this practice is violated, both the new and established apiaries usually produce a smaller total crop of honey.

## Bee Stings

Bee stings are annoying to most experienced beekeepers as well as to beginners, but the degree of sensitivity varies considerably. Experienced beekeepers still suffer as much pain from the initial prick of a sting, but they quickly build up an immunity to bee-vemon which reduces or eliminates after-effects.

The degree of pain and swelling resulting from a sting depends on the length of time the sting remains in the skin and the amount of poison which enters the flesh. Therefore, it is highly important to rub or scrape out the sting immediately; never pull it out. If it is pulled out, the fingers press the poison sacs attached to the base of the sting and this forces the poison through the barbs of the sting into the flesh, like pressing the bulb of a medicine dropper.

Those who are highly sensitive to bee-vemon and who do not appear to be able to build up an immunity to it, should consult a physician. Some of the new antihistamine drugs have given relief.

## Cause for Success or Failure in Beekeeping

Of the many contributions to success in beekeeping; four stand out above all the others: (1) eradication of American foulbrood; (2) control of wax moths; (3) keeping the colonies headed with young productive queens; and (4) enough room for the rearing of brood and the storage of honey.

### Diseases of bees

The control of bee diseases is a major problem in beekeeping. Of the diseases that affect the brood of bees, American foulbrood is the most serious. Losses normally result because beekeepers fail to examine each colony thoroughly for this disease in the spring, the summer, and the fall.

The bacterium that causes the disease (*Bacillus larvae*) forms a resistant spore capable of withstanding high temperatures and existing in bee equipment for years. Colonies of bees may die of American foulbrood without the owner realizing what caused their death. Beginners in beekeeping should be cautious about buying used equipment. To prevent the spread of disease, beekeepers wishing to sell bees or used equipment are required by law to secure a permit from the Department of Agriculture and Markets, Albany, New York. Prospective purchasers of bees or used equipment should make certain that the seller has this permit.

When disease breaks out in any one portion of the State, all the colonies surrounding the source of infection must be examined. For this reason it is required that all colonies be housed in hives with frames that may be removed without difficulty. The keeping of bees in boxes or hives from which the combs cannot be removed is illegal.

At one time European foulbrood caused enormous losses in this State, but with the use of improved methods of colony management and by the introduction of Italian stock, this disease has been held under control. It is still present however, in the State, and remains a problem in many apiaries.

A disease known as *Sacbrood* occurs throughout the State. Since this disease and European foulbrood resemble American foulbrood in certain respects, and since there is such a wide difference in their destructiveness, exact diagnosis is important. Information on differences in symptoms of these three diseases is given in Circular 392, *Diagnosing Bee Diseases in the Apiary*, which may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

One should never attempt to treat colonies suspected of having American foulbrood, but should immediately consult the Apiculturist, Department of Agriculture and Markets, Albany, New York. Questions concerning inspection, diagnosis, and methods of control should be forwarded to the same address.

The Division of Bee Culture, Agricultural Research Center, Beltsville, Maryland, examines samples of brood and adult bees without charge. For diagnosing brood or brood remains, one should send a sample of comb, about 4 by 4 inches, containing the affected brood or brood remains; avoid including any honey in the sample. In case of suspected poisoning of adult bees, not less than 200 sick or dead bees should be sent for examination. Mail all samples in a wooden or heavy cardboard box, never tin, glass, or waxed paper, as the samples usually mold.

### Apiary pests

The wax moth (*Galleria melonella*), often referred to as the *bee moth*, *wax worm*, and *web worm*, is found throughout the State and causes severe damage to combs. The moths lay eggs in the crevices of the hives. On hatching, the minute, highly mobile larvae make their way to the combs. The larvae grow rapidly and construct strong tunnels of silk as they burrow through and among the combs, feeding on the pollen, cocoons, and honey. On reaching maturity the larvae spin tough silken cocoons around themselves, emerging later as adult moths.

During warm weather, weak colonies as well as combs in storage are subject to wax-moth attack. Destruction is rapid and so complete that the combs are reduced to a mass of webs and debris in a few weeks.

Stored combs should be examined every two weeks. When the first signs of wax moth appear, they should be fumigated. Paradichlorobenzene and sulfur are two of the fumigants most commonly used.

A circular entitled *Some Fumigants Used to Control Wax Moth* may be ob-

tained by writing to the Office of Apiculture, Comstock Hall, New York State College of Agriculture, Ithaca, New York.

### **Importance of good queens**

A colony of bees normally consists of one queen (the mother of the hive), thousands of worker bees (sexually undeveloped females) which do all the work in the field and the hive, and some drones (males) which mate with young queens. Since the one queen lays all the eggs in the hive, the growth and productivity of the colony is entirely dependent on her. It is therefore highly important that each colony be headed by a young, prolific, egg-laying queen. The degree of success among beekeepers large and small normally depends on the amount of attention given to queens. Good queens result in better wintering, faster build up in population in the spring, less trouble with swarming, and a larger crop of honey. Regardless of how much care and attention is given a colony, it will not produce the best crop of honey unless it is headed by a young prolific queen.

### **Room for brood-rearing and storage of honey**

Insufficient room for the queen to lay her eggs and for the bees to store honey is one the greatest causes for failure in beekeeping. Swarming is the natural method of increase of honeybees, and a crowded or congested brood-chamber stimulates the colony to swarm. Honeybees prefer to expand their brood nest in an upward direction. If this expansion is restricted, even weak colonies prepare to swarm. Swarming usually takes place during the period of greatest brood-rearing. In New York State this peak is normally in the spring after the dandelions commence to bloom and before the clovers start to yield nectar. During this period it is especially important to provide ample worker comb in which the queen may expand her nest in an upward direction.

The problem of swarm control is greatest between the dandelion- and clover-honey flows, but it continues later into the season if there is not enough room for the bees to store nectar. Bees short of storage space are forced to hold the nectar in their honey stomachs. When these bees are unable to work in the fields they crowd the brood chamber and this stimulates swarming. Failure to provide ample storage space results in the loss of many swarms and a reduction in the honey crop.

### **Summary of Seasonal Management**

It is not difficult or time consuming to manage a few colonies for honey production or pollination, but it is imperative to give the colonies adequate attention at definite periods during the active season.

The following summary of seasonal management for central New York State is designed to help beekeepers manage their colonies efficiently.

The dates given are approximate for central New York in a normal season. Southern counties are usually from one week to ten days earlier and northern counties from one week to ten days later. This plan of operation is satisfactory during an average year, but it should be modified to meet changing honey-flow conditions.

**First warm day during the later part of March or early April when the bees are flying:**

1. Clean the entrances to the colonies. In the fall, colony entrances are reduced in size (about  $2\frac{1}{2}$  inches long by  $\frac{3}{8}$  inch high) to help the bees keep warm and to prevent mice from entering. Sometimes dead bees or dislodged insulating materials restrict or clog the entrances and should be removed. As the weather becomes warm in the spring, the entrances are enlarged.
2. Close the entrances of dead colonies or remove them to a bee-tight building or cellar where it is impossible for bees to rob the honey from the combs. This precaution prevents the spread of American foulbrood.
3. Unite queenless colonies, or those with failing queens, by placing them above strong colonies with a sheet of newspaper between. The paper should be pierced in two or three places. If time and temperature permit, it is advisable to remove the failing queens.
4. Strengthen weak colonies with young prolific queens by placing them above strong colonies with a queen excluder and a piece of newspaper between them. Use as little smoke as possible, and avoid exciting the strong colonies. The colonies should be united during the latter part of March or early April and separated toward the end of the dandelion- or fruit-bloom flow. When you have separated the colonies, set the stronger of the two colonies on a new stand. This helps to equalize the field forces of the two colonies because many of the field bees in the stronger colony will return to their old location.
5. Feed the colonies if necessary with a mixture of one or two parts of white sugar to one part of water, by weight or measure. Feeding is rarely necessary if ample food is provided in the fall.

**Late April or early May when the dandelions and fruit commence to bloom:**

1. Unpack the colonies and check for food, diseases, and performance of the queens in egg laying.
2. Provide ample worker comb for the queen to lay in and freely expand her nest in an upward direction. This is necessary to prevent the bees from getting the desire to swarm. You may expand the brood-nest in two general ways:

- a. Reverse the brood chambers of all strong colonies and add a super of worker comb when the colonies need more room.
- b. Add a super of worker comb on top of each colony.  
In each method a frame of sealed brood is raised from the lower brood-chamber into the super which is added. Both of these methods provide enough room for the bees to work in an upward direction.
3. Feed if necessary. Starvation of bees between the dandelion and clover flow is one of the principal causes of unprofitable beekeeping. Never let a colony get below the equivalent of three full combs of honey, especially at this critical time of year.
4. If you find queen cells built in anticipation of swarming, use one of the following methods to prevent swarming. Colonies may be checked for queen cells by separating the hive-bodies and examining the bottom of the combs of the upper hive-bodies.
  - a. Remove all queen cells and reverse the brood chambers.
  - b. Divide the colony into two parts, making certain that the brood, bees, and honey are divided about equally. All the queen cells should be removed from the division containing the queen, but one or two healthy queen cells should be left in the queenless part.
  - c. Remove all the queen cells and exchange the position of strong colonies in the apiary with weak ones. Enough field bees usually leave the strong colonies, return to their old locations, and enter the weak colonies. This prevents further trouble from swarming for at least two weeks.
5. It is unnecessary to clip the wings of the queens if enough room is provided.
6. Fumigate stored combs if even one wax-moth larvae is found working in them.

**At the beginning of clover honey-flow (usually during the last half of June):**

Beekeepers manipulate their colonies in different ways, at the beginning of the clover flow, to keep them from getting the desire to swarm. Two of the most popular ways are as follows:

1. Place the queen in the lowest chamber. This is usually accomplished by driving the bees down out of the supers into the lowest chamber with smoke, certain acid fumes, or shaking them from the combs. Add a queen excluder and a super of drawn combs and then place the hive-body, or hive-bodies, containing brood on top of this super of drawn combs. An additional super of combs should be placed on top of the colony to insure ample space for the storage of honey. Confining the queen to one hive-



body during the light honey-flow is a popular method among beekeepers.

2. Some beekeepers prefer to let the queen have the run of two brood chambers throughout the entire season. With this method, swarming is usually prevented by reversing the brood chambers at least once or twice during May and early June. At the beginning of the clover flow, remove five or six frames of brood from each colony and place them in the center of the third super, which is added at this time. Shake each frame of brood, as it is removed, to dislodge the bees. This permits inspection of the combs for American foulbrood and at the same time prevents the queen from being carried up into the supers. When this operation is completed, place a queen excluder between the second chamber and the third super which now contains five or six frames of brood. This method provides ample room for the queen to lay in the two lower brood chambers and at the same time stimulates the bees to work in the supers above the excluder.
3. Examine the colonies for room and for queen cells about every two weeks during the clover honey-flow.

**At the end of the clover honey-flow (latter part of July or early August):**

1. Requeen or at least mark the colonies which need new queens so they may be requeened as soon as time permits. Young queens insure good wintering and a maximum honey crop the following year.
2. Examine the colonies for disease before removing the honey crop.
3. Remove and extract the clover-honey crop and return the supers to the colonies for buckwheat or other fall honey-flows.

**At the end of the buckwheat and fall honey-flow (usually during the latter part of September):**

1. Unite all weak and queenless colonies with other strong colonies.
2. Examine the colonies for disease.
3. Remove the supers and queen excluders and reduce each colony to two hive-bodies for winter. Make certain that the top hive-body or second brood chamber is full of honey.
4. Remove and extract the surplus honey and store the supers for winter.

**Pack the colonies for winter (usually about the middle of October):**

1. Colonies in two hive-bodies should weigh about 130 pounds. Feed any colonies that do not meet this weight.

To complete their work on schedule, commercial beekeepers who operate several apiaries will usually find it necessary to start their work earlier and continue later than the dates indicated.



A publication of the  
New York State College of Agriculture,  
a unit of the State University of New York,  
at Cornell University

Revised October 1955

Published by the New York State College of Agriculture at Cornell  
University, Ithaca, New York. M. C. Bond, Director of Extension.  
Published and distributed in furtherance of the purposes provided for  
in the Acts of Congress of May 8 and June 30, 1914.